

**What Is Claimed Is:**

1           1. A method for supporting mobility of a wireless local area network voice terminal using  
2 a data line, comprising:

3           performing a probe process during association signaling between the wireless local area  
4 network voice terminal and a first access point where the wireless local area network voice terminal  
5 roams to a second access point;

6           performing a media access control address authentication process by the wireless local area  
7 network voice terminal and the second access point;

8           performing by a circuit interface unit, handover by using terminal information of the wireless  
9 local area network voice terminal and media access control address information of the first access  
10 point upon the re-association request of the wireless local area network voice terminal through the  
11 second access point; and

12           performing an association signaling process after the handover by the wireless local area  
13 network voice terminal and the second access point.

1           2. The method of claim 1, further comprising of transmitting by the second access point,  
2 additional information to the wireless local area network voice terminal, when the second access  
3 point receives a re-association request signal from the wireless local area network voice terminal in  
4 the step of performing the handover by the circuit interface unit.

1           3. The method of claim 2, wherein the additional information which the second access point  
2 transmits to the wireless local area network voice terminal is status information notifying whether  
3 the current status of the second access point is busy or idle.

1           4. The method of claim 1, wherein the association signaling between the wireless local area  
2 network voice terminal and the first access point in the step of performing a probe process during  
3 association signaling comprises:

4           requesting by the first access point, a call connection by transmitting a call connection setup  
5 request signal to the circuit interface unit, when the wireless local area network voice terminal  
6 requests association to the first access point;

7           transmitting by the circuit interface unit, a call connection alert signal to the first access point;  
8           attempting to be associated with the wireless local area network voice terminal by the first  
9 access point, when it receives the call connection alert signal from the circuit interface unit;

10          requesting by the circuit interface unit, a call connection setup to the first access point, and  
11 also requesting by the circuit interface unit of a outcall processing to the switching system; and

12          requesting by the circuit interface unit, a channel allocation by transmitting a channel  
13 allocation request signal to the first access point.

1           5. The method of claim 1, wherein the step of performing the media access control address  
2 authentication process comprises:

3           transmitting by the wireless local area network voice terminal, a media access control

4 authentication request signal including a media access control address to the second access point;  
5 performing authentication by using stored media access control address information by the  
6 second access point; and  
7 transmitting by the second access point, a media access control authentication completion  
8 response signal to the wireless local area network voice terminal, when the wireless local area  
9 network voice terminal can be associated with the second access point as a result of authentication.

1 6. The method of claim 1, wherein the step of performing the handover by the circuit  
2 interface unit, comprises:

3 transmitting a re-association request signal including a media access control address of the  
4 first access point to the second access point by the wireless local area network voice terminal;  
5 requesting handover by the second access point by transmitting media access control address  
6 information of the first access point, and media access control address information and Internet  
7 protocol address information of the wireless local area network voice terminal to the circuit interface  
8 unit;

9 receiving the handover request signal from the second access point by the circuit interface  
10 unit confirming whether a B channel has been allocated to the first access point; and

11 requesting by the circuit interface unit channel, deallocation to the first access point and  
12 deallocating the allocated B channel by performing signal handover when the B channel has not been  
13 allocated to the first access point, and performing voice handover, when the B channel has been  
14 allocated to the first access point.

1           7. The method of claim 1, wherein the step of performing the association signaling process,  
2 comprises:

3           requesting by the second access point, call connection by transmitting a call connection setup  
4 request signal to the circuit interface unit, when the wireless local area network voice terminal  
5 requests association to the second access point;

6           transmitting a call connection alert signal to the second access point by the circuit interface  
7 unit;

8           attempting to be associated with the wireless local area network voice terminal by the second  
9 access point, when the second access point receives the call connection alert signal from the circuit  
10 interface unit;

11          requesting call connection setup to the second access point, and requesting outcall processing  
12 to the switching system by the circuit interface unit;

13          requesting by the circuit interface unit, a channel allocation by transmitting a channel  
14 allocation request signal to the second access point;

15          allocating a B channel and transmitting a success message to the wireless local area network  
16 voice terminal by the second access point; and

17          setting up a call and providing voice communication by the second access point, when the  
18 second access point receives a final response signal from the wireless local area network voice  
19 terminal.

1           8. The method of claim 1, wherein the association signaling between the wireless local area  
2 network voice terminal and the first access point in the step of performing a probe process during  
3 association signaling comprises:

4           requesting a call connection by the first access point, when the wireless local area network  
5 voice terminal requests association to the first access point;

6           attempting to be associated with the wireless local area network voice terminal by the first  
7 access point, when the first access point receives the call connection alert signal from the circuit  
8 interface unit;

9           requesting a call connection setup to the first access point by the circuit interface unit; and

10          requesting by the circuit interface unit, a channel allocation by transmitting a channel  
11 allocation request signal to the first access point.

1           9. The method of claim 8, wherein the performing of the media access control address  
2 authentication process comprises:

3           transmitting a media access control authentication request signal including a media access  
4 control address to the second access point;

5           performing authentication by using stored media access control address information; and

6           transmitting a media access control authentication completion response signal to the wireless  
7 local area network voice terminal, when the wireless local area network voice terminal can be  
8 associated with the second access point as a result of authentication.

1           10. The method of claim 9, wherein the performing of the handover, comprises:

2           transmitting a re-association request signal including a media access control address of the  
3           first access point to the second access point;

4           requesting handover by transmitting media access control address information of the first  
5           access point, and media access control address information and Internet protocol address information  
6           of the wireless local area network voice terminal to the circuit interface unit; and

7           receiving the handover request signal confirming whether a B channel has been allocated to  
8           the first access point.

1           11. The method of claim 10, wherein the performing of the association signaling process,  
2           comprises:

3           requesting a call connection by transmitting a call connection setup request signal to the  
4           circuit interface unit, when the wireless local area network voice terminal requests association to the  
5           second access point;

6           attempting to be associated with the wireless local area network voice terminal by the second  
7           access point, when the second access point receives the call connection alert signal from the circuit  
8           interface unit;

9           requesting call connection setup to the second access point, and requesting outcall processing  
10          to the switching system by the circuit interface unit;

11          requesting by the circuit interface unit, a channel allocation by transmitting a channel  
12          allocation request signal to the second access point; and

13           setting up a call and providing voice communication by the second access point, when the  
14           second access point receives a final response signal from the wireless local area network voice  
15           terminal.

1           12. A method for supporting mobility of a wireless local area network voice terminal using  
2           a data line, comprising:

3           performing a probe process during an active call between the wireless local area network  
4           voice terminal and a first access point where the wireless local area network voice terminal roams  
5           to a second access point;

6           performing a media access control address authentication process by the wireless local area  
7           network voice terminal and the second access point;

8           performing a handover by a circuit interface unit by using terminal information of the  
9           wireless local area network voice terminal and media access control address information of the first  
10          access point upon the re-association request of the wireless local area network voice terminal through  
11          the second access point;

12          performing an association signaling process after performing the handover by the wireless  
13          local area network voice terminal and the second access point; and

14          setting up a call and providing voice communication by the second access point after the  
15          association signaling process.

1           13. The method of claim 12, further comprising of transmitting additional information to the

2 wireless local area network voice terminal by the second access point, when the second access point  
3 receives a re-association request signal from the wireless local area network voice terminal in the  
4 step of performing the handover.

1 14. The method of claim 13, wherein the additional information which the second access  
2 point transmits to the wireless local area network voice terminal is status information notifying  
3 whether the current status of the second access point is busy or idle.

1 15. The method of claim 12, wherein the step of performing the media access control address  
2 authentication process comprises:

3 transmitting a media access control authentication request signal including a media access  
4 control address to the second access point by the wireless local area network voice terminal;

5 authenticating the wireless local area network voice terminal by using stored media access  
6 control address information by the second access point; and

7 transmitting a media access control authentication completion response signal to the wireless  
8 local area network voice terminal by the second access point, when the wireless local area network  
9 voice terminal can be associated with the second access point as a result of authentication.

1 16. The method of claim 12, wherein the step of performing the handover comprises:

2 transmitting a re-association request signal including a media access control address of the  
3 first access point to the second access point by the wireless local area network voice terminal;



4            requesting handover by the second access point by transmitting media access control address  
5            information of the first access point, and media access control address information and Internet  
6            protocol address information of the wireless local area network voice terminal to the circuit interface  
7            unit;

8            receiving the handover request signal from the second access point confirming by the circuit  
9            interface unit whether a B channel has been allocated to the first access point; and

10           requesting channel deallocation to the first access point and deallocating the allocated B  
11           channel by the circuit interface unit by performing signal handover when the B channel has not been  
12           allocated to the first access point, and performing voice handover, when the B channel has been  
13           allocated to the first access point.

1           17. The method of claim 12, wherein the step of performing the association signaling process  
2           comprises:

3           requesting call connection by transmitting a call connection setup request signal to the circuit  
4           interface unit by the second access point, when the wireless local area network voice terminal  
5           requests association to the second access point;

6           transmitting a call connection alert signal to the second access point by the circuit interface  
7           unit;

8           attempting to be associated with the wireless local area network voice terminal by the second  
9           access point, when it receives the call connection alert signal from the circuit interface unit;

10           requesting call connection setup to the second access point and requesting outcall processing

11 to the switching system by the circuit interface unit;  
12 requesting channel allocation by transmitting a channel allocation request signal to the second  
13 access point by the circuit interface unit;  
14 allocating a B channel and transmitting a success message to the wireless local area network  
15 voice terminal by the second access point; and  
16 setting up a call and providing voice communication by the second access point, when the  
17 second access point receives a final response signal from the wireless local area network voice  
18 terminal.

1 18. An apparatus for supporting mobility of a wireless local area network voice terminal  
2 using a data line, comprising:

3 a plurality of access points including a first and second access points;  
4 the wireless local area network voice terminal roams to the second access point and performs  
5 a probe process during association signaling between the wireless local area network voice terminal  
6 and the first access point, the wireless local area network voice terminal and the second access point  
7 perform a media access control address authentication process; and

8 a circuit interface unit performs handover by using terminal information of the wireless local  
9 area network voice terminal and media access control address information of the first access point  
10 upon the re-association request of the wireless local area network voice terminal through the second  
11 access point, the wireless local area network voice terminal and the second access point perform an  
12 association signaling process after the handover.

1           19. The method of claim 18, wherein the second access point transmits additional  
2 information to the wireless local area network voice terminal, when the second access point receives  
3 a re-association request signal from the wireless local area network voice terminal in the step of  
4 performing the handover by the circuit interface unit.

1           20. The method of claim 19, wherein the additional information which the second access  
2 point transmits to the wireless local area network voice terminal is status information notifying  
3 whether the current status of the second access point is busy or idle.

1           21. A method, comprising:  
2           performing a probe process during an active call between a terminal and a first access point  
3 where the voice terminal roams to a second access point;  
4           performing a media access control address authentication process by the terminal and the  
5 second access point;  
6           performing a handover by an interface unit by using terminal information of the terminal and  
7 media access control address information of the first access point upon the re-association request of  
8 the wireless local area network voice terminal through the second access point;  
9           performing an association signaling process after performing the handover by the terminal  
10 and the second access point; and  
11          setting up a call and providing voice communication by the second access point after the

12 association signaling process.

1           22. The method of claim 21, further comprising of transmitting additional information to the  
2 terminal by the second access point, when the second access point receives a re-association request  
3 signal from the terminal in the step of performing the handover.

1           23. The method of claim 22, wherein the additional information which the second access  
2 point transmits to the terminal is status information notifying whether the current status of the second  
3 access point is busy or idle.

1           24. The method of claim 23, wherein the performing of the media access control address  
2 authentication process comprises:

3           transmitting a media access control authentication request signal including a media access  
4 control address to the second access point by terminal;

5           authenticating the terminal by using stored media access control address information by the  
6 second access point; and

7           transmitting a media access control authentication completion response signal to the terminal  
8 by the second access point, when the wireless local area network voice terminal can be associated  
9 with the second access point as a result of authentication.

1           25. The method of claim 24, wherein the performing of the handover comprises:

2 transmitting a re-association request signal including a media access control address of the  
3 first access point to the second access point by the terminal;

4 requesting handover by the second access point by transmitting media access control address  
5 information of the first access point;

6 receiving the handover request signal from the second access point confirming by the  
7 interface unit whether a first channel has been allocated to the first access point; and

8 requesting channel deallocation to the first access point and deallocating the allocated first  
9 channel by the interface unit by performing signal handover when the first channel has not been  
10 allocated to the first access point, and performing voice handover, when the first channel has been  
11 allocated to the first access point.

1 26. The method of claim 25, wherein the performing of the association signaling process  
2 comprises:

3 requesting call connection by transmitting a call connection setup request signal to the  
4 interface unit by the second access point, when the wireless local area network voice terminal  
5 requests association to the second access point;

6 transmitting a call connection alert signal to the second access point by the interface unit;

7 attempting to be associated with the terminal by the second access point, when the second  
8 access point receives the call connection alert signal from the interface unit;

9 requesting call connection setup to the second access point and requesting outcall processing  
10 to the switching system by the interface unit;

11            requesting channel allocation by transmitting a channel allocation request signal to the second  
12            access point by the interface unit;  
13            allocating the first channel and transmitting a success message to the terminal by the second  
14            access point; and  
15            setting up a call and providing voice communication by the second access point, when the  
16            second access point receives a final response signal from the terminal.

1            27. A computer-readable medium having computer-executable instructions for performing  
2            a method, comprising:

3            performing a probe process during an active call between a terminal and a first access point  
4            where the voice terminal roams to a second access point;

5            performing a media access control address authentication process by the terminal and the  
6            second access point;

7            performing a handover by an interface unit by using terminal information of the terminal and  
8            media access control address information of the first access point upon the re-association request of  
9            the wireless local area network voice terminal through the second access point;

10           performing an association signaling process after performing the handover by the terminal  
11           and the second access point; and

12           setting up a call and providing voice communication by the second access point after the  
13           association signaling process.

1           28.     A computer-readable medium having stored thereon a data structure comprising:  
2                 a first field containing data representing performing a probe process during association  
3 signaling between the wireless local area network voice terminal and a first access point where the  
4 wireless local area network voice terminal roams to a second access point;  
5                 a second field containing data representing performing a media access control address  
6 authentication process by the wireless local area network voice terminal and the second access point;  
7                 a third field containing data representing performing by a circuit interface unit, handover by  
8 using terminal information of the wireless local area network voice terminal and media access  
9 control address information of the first access point upon the re-association request of the wireless  
10 local area network voice terminal through the second access point; and  
11                 a fourth field containing data representing performing an association signaling process after  
12 the handover by the wireless local area network voice terminal and the second access point.